

(5) The engine speed shall be increased to 2500 rpm \pm 300 rpm, with transmission in neutral, for 30 seconds.

(6) The engine speed shall be reduced to free idle with transmission in neutral. Record exhaust concentrations after stabilized readings are obtained or at the end of 30 seconds, whichever occurs first. This process shall be repeated as necessary for multiple exhaust pipes, or hardware which is capable of simultaneously sampling vehicles with multiple tailpipes may be used. However, if this type of hardware is not used, exhaust concentrations from each pipe shall be measured within the 30 second period if stable readings can be obtained from both pipes before the 30 seconds have elapsed. If this is not possible, the entire procedure beginning from step (3) shall be repeated for the second pipe. Neither multiple readings nor simultaneous sampling hardware is necessary for exhaust systems in which the exhaust pipes originate from a common point.

(7) Multiple readings from multiple exhaust pipes shall be numerically averaged, if taken.

[49 FR 24323, June 12, 1984, as amended at 58 FR 58402, Nov. 1, 1993]

§ 85.2212 Idle test—EPA 81.

(a)(1) *General calendar year applicability.* The test procedure described in this section may be used to establish Emissions Performance Warranty eligibility through December 31, 1993, except as allowed in paragraph (a)(2) of this section.

(2) *Special calendar and model year applicability.* (i) The extended applicability described in paragraphs (a)(2)(ii) through (iv) of this section is restricted to 1995 and earlier model year vehicles or engines.

(ii) In a state for which the Administrator has approved a State Implementation Plan revision providing for the implementation of a basic decentralized program meeting the requirements of part 51, subpart S of this chapter, according to the schedule specified in § 51.373 of this chapter, the test procedure described in this section may be used to establish Emissions Performance Warranty eligibility through December 31, 1993.

(iii) In a state for which the Administrator has approved a State Implementation Plan revision providing for the implementation of a basic centralized program meeting the requirements of part 51, subpart S of this chapter, according to the schedule specified in § 51.373 of this chapter, the test procedure described in this section may be used to establish Emissions Performance Warranty eligibility through June 30, 1994.

(iv) In a state for which the Administrator has approved a State Implementation Plan revision providing for the implementation of an enhanced program meeting the requirements of part 51, subpart S of this chapter, according to the schedule specified in § 51.373 of this chapter, the test procedure described in this section may be used to establish Emissions Performance Warranty eligibility through December 31, 1995.

(b) *General requirements.* Vehicles shall be tested in as-received condition. Engines shall be at normal operating temperature and not overheating (as indicated by gauge, warning light or boiling radiator) with all accessories off.

(c) *Test sequence.* (1) Analyzers shall be warmed-up, in stabilized operating condition and adjusted as required in § 85.2217.

(2) *Optional:* The engine may be preconditioned by operating it at 2500 \pm 300 rpm for up to 30 seconds.

(3) With engine idling and transmission in neutral, the sample probe shall be inserted into the tailpipe. Record exhaust concentrations after stabilized readings are obtained or at the end of 30 seconds, whichever occurs first. This process shall be repeated as necessary for multiple exhaust pipes, or hardware which is capable of simultaneously sampling vehicles with multiple tailpipes may be used. Neither multiple readings nor simultaneous sampling hardware is necessary for exhaust systems in which the exhaust pipes originate from a common point.

(4) Multiple readings from multiple exhaust pipes shall be numerically averaged, if taken.

[49 FR 24323, June 12, 1984, as amended at 58 FR 58403, Nov. 1, 1993]

§ 85.2213 Idle test—EPA 91.

(a) *General requirements.*—(1) *Exhaust gas sampling algorithm.* The analysis of exhaust gas concentrations must begin ten seconds after the applicable test mode begins. Exhaust gas concentrations must be analyzed at a minimum rate of once every 0.75 second. The measured value for pass/fail determinations is a simple running average of the measurements taken over five seconds.

(2) *Pass/fail determination.* A pass or fail determination is made for each applicable test mode based on a comparison of the short test standards contained in §§ 85.2203 and 85.2204, and the measured value for HC and CO as described in paragraph (a)(1) of this section. A vehicle passes the test mode if any pair of simultaneous measured values for HC and CO are below or equal to the applicable short test standards. A vehicle fails the test mode if the values for either HC or CO, or both, in all simultaneous pairs of values are above the applicable standards.

(3) *Void test conditions.* The test immediately terminates and any exhaust gas measurements are voided if the measured concentration of CO plus CO₂ falls below six percent or the vehicle's engine stalls at any time during the test sequence.

(4) *Multiple exhaust pipes.* Exhaust gas concentrations from vehicle engines equipped with multiple exhaust pipes must be sampled simultaneously.

(5) The test is immediately terminated upon reaching the overall maximum test time.

(b) *Test sequence.* (1) The test sequence consists of a first-chance test and a second-chance test as described in paragraphs (b)(1) (i) and (ii) of this section.

(i) The first-chance test, as described under paragraph (c) of this section, consists of an idle mode.

(ii) The second-chance test as described under paragraph (d) of this section is performed only if the vehicle fails the first-chance test.

(2) The test sequence begins only after the requirements listed in paragraphs (b)(2) (i) through (iv) of this section are met.

(i) The vehicle is tested in as-received condition with the transmission in neutral or park and all accessories

turned off. The engine must be at normal operating temperature (as indicated by a temperature gauge, temperature lamp, touch test on the radiator hose, or other visual observation indicating that overheating has not occurred).

(ii) The tachometer must be attached to the vehicle in accordance with the analyzer manufacturer's instructions.

(iii) The sample probe is inserted into the vehicle's tailpipe to a minimum depth of 10 inches. If the vehicle's exhaust system prevents insertion to this depth, a tailpipe extension must be used.

(iv) The measured concentration of CO plus CO₂ must be greater than or equal to six percent.

(c) *First-chance test.* The test timer starts (tt=0) when the conditions specified in paragraph (b)(2) of this section are met. The overall maximum test time for the first-chance test is 145 seconds (tt=145). The first-chance test consists of an idle mode only.

(1) The mode timer starts (mt=0) when the vehicle engine speed is between 350 and 1100 rpm. If engine speed exceeds 1100 rpm or falls below 350 rpm, the mode timer resets to zero and resumes timing. The minimum mode length is determined as described under paragraph (c)(2) of this section. The maximum mode length is 90 seconds elapsed time (mt=90).

(2) The pass/fail analysis begins after an elapsed time of ten seconds (mt=10). A pass or fail determination is made for the vehicle and the mode is terminated in accordance with paragraphs (c)(2) (i) through (v) of this section.

(i) The vehicle passes the idle mode and the test is immediately terminated if, prior to an elapsed time of 30 seconds (mt=30), measured values are less than or equal to 100 ppm HC and 0.5 percent CO.

(ii) The vehicle passes the idle mode and the test terminates at the end of an elapsed time of 30 seconds (mt=30), if prior to that time the criteria of paragraph (c)(2)(i) of this section are not satisfied and the measured values are less than or equal to the applicable short test standards as determined by the procedure described in paragraph (a)(2) of this section.